

## WHAT IS CLAIMED IS:

1. An optical apparatus for reading address information from an optical disc which has tracks for recording information and track spaces, formed between said tracks, on which the address information to identify a position on said optical disc is recorded, said optical apparatus comprising:

an optical head for irradiating the optical disc with light, said optical head including tracking detectors divided into a first detector and a second detector along said tracks, each detector detecting reflecting light from the optical disc and outputting a detection signal,

an balance adjusting circuit for address detection for receiving the first detection signal outputted by the first detector and the second detection signal outputted by the second detector, said adjusting circuit adjusting amplitudes of the first detection signal and the second detection signal and outputting an adjusted first detection signal and an adjusted second detection signal, respectively, at a position where the address information is recorded,

an address detection differential amplifying circuit for outputting an address detection differential signal which is a difference between the adjusted first detection signal and the adjusted second detection signal adjusted by the balance adjusting circuit for address detection, and

an address detecting circuit for detecting the address information based on the address detection differential signal outputted from the address detection differential amplifying circuit.

2. The optical disc apparatus according to claim 1 further comprising:

an amplitude detecting circuit for detecting amplitudes of the first

detection signal and the second detection signal,

said balance adjusting circuit for address detection adjusting amplitudes of the first detection signal and the second detection signal to become substantially equal based on the amplitudes of the first detection signal and the second detection signal detected by the amplitude detecting circuit, and outputting the first detection signal and the second detection signal.

3. The optical disc apparatus according to claim 1 further comprising:

a detecting section for detecting a reading ratio of the address information,

said balance adjusting circuit for address detection adjusting amplitudes of the first detection signal and the second detection signal to maximize the reading ratio detected by the detecting section.

4. The optical disc apparatus according to claim 2, wherein the optical disc has wobbles formed in the radial direction at a predetermined cycle to be used for controlling rotation of the optical disc, and said apparatus further comprising:

a balance adjusting circuit for wobble detection for receiving the first detection signal and the second detection signal, adjusting signal levels of the first detection signal and the second detection signal to be substantially equal, and outputting an first adjusted detection signal and an second adjusted detection signal,

a wobble detection differential amplifying circuit for outputting a wobble detection differential signal, which is a difference between the first adjusted detection signal and the second adjusted detection signal adjusted by the

balance adjusting circuit for wobble detection, and

a wobble signal detection circuit for detecting the wobble based on the wobble detection differential signal outputted from the wobble detection differential amplifying circuit.

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5. The optical disc apparatus according to claim 4, wherein the balance adjusting circuit for wobble detection adjusts the signal level of the first detection signal and the signal level of the second detection signal and minimizes the jitter amount based on the jitter amount of the wobble detected by the wobble signal detection circuit.

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6. The optical disc apparatus according to claim 4 further comprising:

a detection section for detecting a reading ratio of the address information,

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said balance adjusting circuit for wobble detection adjusting the signal levels of the first detection signal and the second detection signal in such a manner that the reading ratio detected by the detection section becomes a maximum.

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7. The optical disc apparatus according to claim 4 further comprising:

a gain control circuit for making amplitudes of the first detection signal and the second detection signal constant.

8. A method for reading the address information from an optical disc which has tracks for recording information and track spaces, formed between the

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tracks, on which the address information to identify the position on said optical disc is recorded, said method comprising steps of:

irradiating the optical disc with light,

5 detecting the reflected light from the optical disc and outputting a detection signal detected by tracking detectors divided into a first detector and a second detector in the track direction,

receiving the first detection signal outputted by the first detector and the second detection signal outputted by the second detector,

10 adjusting the amplitudes of the first detection signal and the second detection signal,

outputting an adjusted first detection signal and an adjusted second detection signal, respectively,

15 outputting an address detection differential signal which is a difference between the adjusted first detection signal and the adjusted second detection signal, and

detecting the address information based on the address detection differential signal outputted.